

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**RESTORATION AND MANAGEMENT OF DECLINING HABITATS**

(Acre)  
CODE 643

**DEFINITION**

Restoring and conserving rare or declining native vegetated communities and associated wildlife species

3. Wetlands of all types – hydric soils statewide.

**PURPOSE**

- Restore land or aquatic habitats degraded by human activity.
- Provide habitat for rare and declining wildlife species by restoring and conserving native plant communities.
- Increase native plant community diversity.
- Management of unique or declining native habitats.

Note: NRCS uses the term “wildlife” to include all animals, terrestrial and aquatic.

**CONDITIONS WHERE PRACTICE APPLIES**

On any landscape which once supported or currently supports the habitat to be restored or managed.

In Illinois there are three recognized critically endangered, endangered or threatened ecosystems (Noss, et al, 1995). These declining habitats and the locations where they can be restored, are:

1. Tallgrass prairies of all types – prairie soils<sup>1</sup> statewide.
2. Oak savanna – On areas that once supported savannas. Savannas typically occurred on prairie soils and transition soils<sup>1</sup> in the savanna region indicated in figure 1.

- 1- Prairie soils – soils developed under prairie vegetation and have thick dark surface and subsurface layers.  
Timber soils – soils developed under forest vegetation and have thin dark surface layers and light colored subsurface layers.  
Transition soils – soils that developed under mixed forest prairie vegetation.

**CRITERIA**

General Criteria Applicable to All Purposes Above

- Methods used will be designed to protect the soil resource from erosion.
- Vegetative manipulation to maximize plant and/or animal diversity can be accomplished by prescribed burning or mechanical, biological or chemical methods, or a combination of the four. Where feasible prescribed burning will be utilized instead of mowing.
- Maintenance measures must be provided to control severe outbreaks of noxious weeds and other invasive species in order to comply with state noxious weed laws.
- To benefit insect food sources for grassland nesting birds, spraying or other control of noxious weeds will be done on a “spot” basis to protect forbs and legumes that benefit native pollinators and other wildlife.
- Management practices and activities are not to disturb cover during the primary nesting period in Illinois. Exceptions could be granted for periodic burning or mowing during establishment or when necessary to maintain the health and/or vigor of the plant community.
- Native species, adapted to the region, shall be used.
- Species will be adapted to soil-site conditions.
- Species will be suitable for the planned purpose.
- Seeding rates will be adequate to accomplish the planned purpose.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

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- Planting dates, and care in handling and planting of the seed will ensure that planted materials have an acceptable rate of survival.
- Only viable, high quality, and adapted seed will be used.
- Site preparation shall be sufficient for establishment and growth of selected species.
- Timing and use of equipment will be appropriate for the site and soil conditions.
- Haying and grazing (if allowed) will be managed as necessary to achieve and maintain the intended purpose.
- All habitat manipulations will be planned and managed according to soil capabilities. All recommendations for management will avoid excessive soil loss.

## CONSIDERATIONS

When developing site specific plans, confer with local specialists that are experienced in restoration of the desired habitat type.

The site should first be evaluated to determine if the habitat can be rehabilitated through management techniques (prescribed burning, brush control, water management); or if the site must be established (reconstructed) by planting, seeding, and/or structures as in the case of a recently cultivated field.

In selection and management of plant species, consider long term land use objectives and habitat needs of target wildlife species.

Consider rotating management/maintenance treatments throughout the managed area.

Consider using this practice to enhance the conservation of threatened and endangered species.

When determining the size and location of the restored area, consider the minimum habitat requirements of desired wildlife species, and other species of concern that may be benefited.

Follow-up habitat assessments should be performed on a regular basis, and management recommendations made to obtain the desired objectives.

## PLANS AND SPECIFICATION

For wetland restorations, prepare site specific plans and specifications following the Illinois NRCS 657 standard for Wetland Restoration.

For prairie and oak savanna restoration, site-specific plans and specification shall be developed based on this standard. A plan includes information about the location and extent, vegetation establishment, management and maintenance requirements.

Specifications will include:

- Management practices needed to restore existing vegetation to the desired condition.
- Site preparation sufficient to establish and grow selected species.
- Species selection and seeding rates to accomplish the planned purpose.
- Planting dates, care, and handling of the seed and other plant materials to ensure that they have an acceptable rate of survival.
- Plan for replanting/reseeding areas that have below acceptable survival.
- Statement that only viable, high quality, and regionally adapted seed and plant materials will be used.
- Plan for periodic inspections to evaluate the progress of the restoration and to develop future management recommendations.

## OPERATION AND MAINTENANCE

A restoration project may require many years to achieve the biological diversity that approximates a native habitat. In the case of a newly established savanna or wooded wetland, a very long time is required for the trees to mature. Proper management of the restored area is essential for the restoration to achieve and maintain the full potential of the site for the desired habitat type. As the vegetation matures, and goes through successional stages, changes in management practices including introduction of new species may be required to maintain and enhance the desired habitat type.

Spot mowing or herbicide treatment will be used to control noxious weeds and other invasive species.

**Management recommendations for prairie maintenance:**

Prairie communities are best managed by the use of prescribed fire. During the establishment of the prairie, prescribed burning should be conducted every year, if there is enough fuel to carry a fire, to stimulate the prairie plants and control weeds. After this period, prescribed burning can be conducted every two or three years. If possible, divide the area into smaller management units and burn part of the area each year. Prescribed burning shall take place during the dormant season (late fall to early spring). Spot mowing or spraying may be needed to control weed problems. Woody vegetation should be controlled and not allowed to shade out the prairie plants.

For more information on prescribed fire, see the "Prescribed Burning" standard (338).

**Management for oak savanna.** – Oak savannas are plant communities that developed and are maintained by fire. Follow the same prescribed burning recommendations above with the exception that only "low intensity" burning techniques should be used such as the "backfire" method. If trees are planted, protect them from fire until they reach a size resistant to fire, usually four to six inches in diameter at breast height. Vegetation should be controlled within a two-foot radius of the trees during this period.

**CITATIONS AND REFERENCES**

McClain, William E. 1997. *Prairie Establishment and Landscaping*. Technical Publication #2. Division of Natural Heritage. Illinois Department of Natural Resources. Springfield, IL. 62p.

Noss, Reed F.; LaRoe III, Edward T.; Scott, Michael J. 1995. *Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation*. U.S. Department of the Interior, National Biological Service, Biological Report 28.

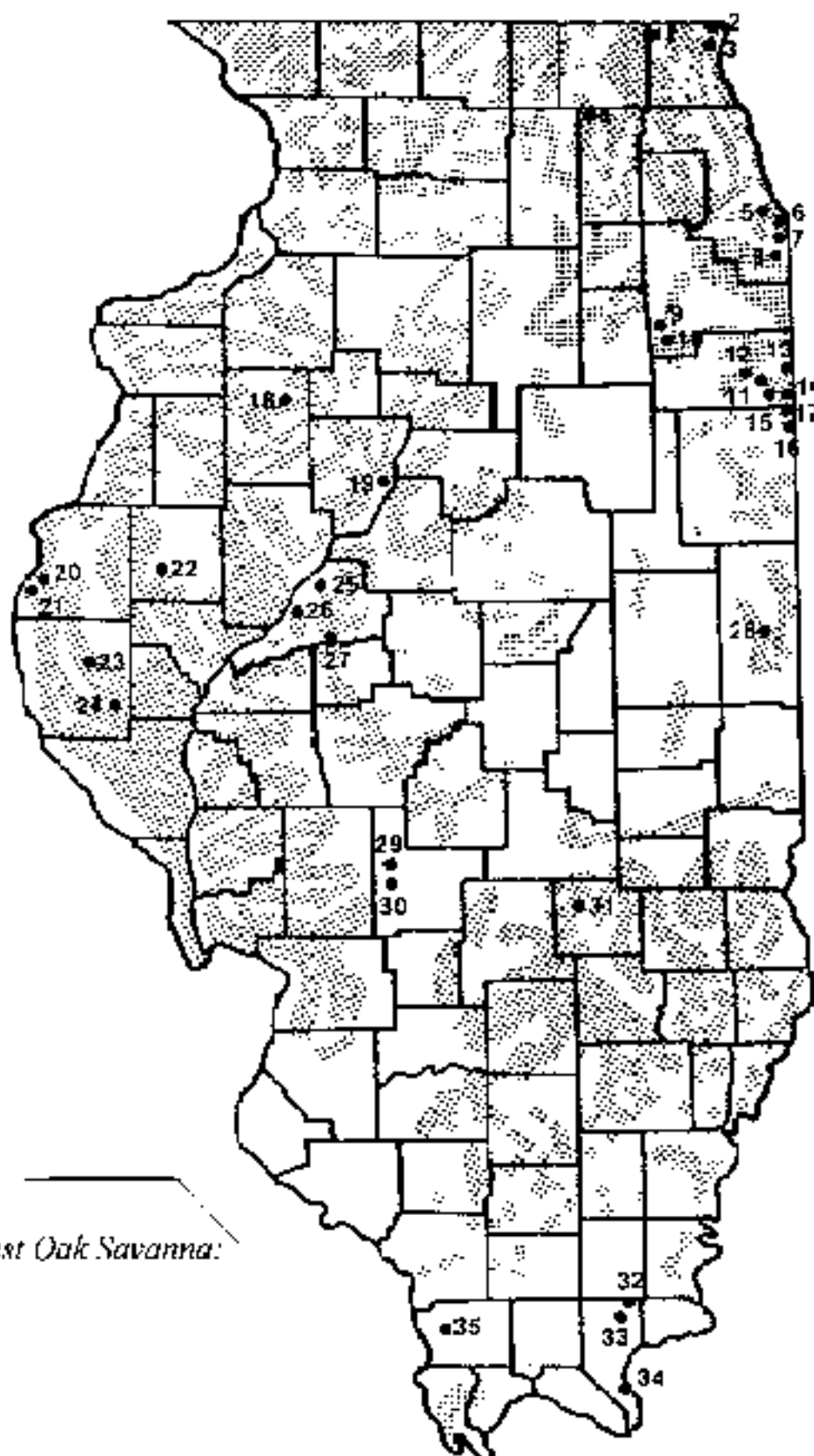
Nuzzo, Victoria A. 1986. *Extent and Status of Midwest Oak Savanna: Presettlement and 1985*. Natural Areas Journal, Vol. 6, Number 2

Packard, Stephen, and Mutel, Cornelia F. (editors). 1997. *The Tallgrass Restoration Handbook: for Prairies, Savannas, and Woodlands*. Island Press. 463p.

Threatened and Endangered Species Policy

The Endangered Species Act

# Potential Presettlement Oak Savanna Region in Illinois



*Extent and Status of Midwest Oak Savanna:  
Presettlement and 1985*  
Nuzzo, Victoria A.  
Natural Areas Journal  
Vol. 6, No. 2 1986

Adapted From: Fehrenbacher, et al., (1934)  
Fanson (1981)  
Kilburn (1959)  
Moran (1978)

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**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE SPECIFICATIONS**

**RESTORATION AND MANAGEMENT OF DECLINING HABITATS**

(Acre)  
CODE 643

**GENERAL SPECIFICATIONS APPLICABLE TO ALL HABITATS**

**RESTORATION OF EXISTING  
DEGRADED HABITATS**

For sites that are not cultivated and still have some of the characteristic species of the pre-settlement habitat type, it is often best to attempt restoration through management techniques such as prescribed burning, brush control, and interseeding with desired species.

- Remove exotic or aggressive brush if necessary.
- Remove excessive stocking of trees.
- Collect appropriate seed and sow in areas opened up as brush is removed.
- Burn one- to two-thirds of area every year on a rotating schedule
- If species diversity does not increase to the desired level after several years, interseed missing species into the existing stand.

For more information see: *The Tallgrass Restoration Handbook: For Prairies, Savannas, and Woodlands*, Edited by Stephen Packard and Cornelia Mutel.

**ESTABLISHMENT OF  
VEGETATION**

**Seed dates and sequence**

Seedings will be performed within the seeding dates listed in Section 1 IL-FOTG-Climatic Data. Only spring and dormant seeding periods will be used. It is recommended that the forbs be planted first during late fall and early winter when soil and air temperatures will remain cold enough to prevent germination. Dormant

seedings are preferred for the forb component of the seed mixtures. It is recommended that the grass component be seeded one year after the forb seeding using the no-till method. This allows the forbs to establish without competition from aggressive tall grass species.

**Lime and fertilizer**

Soil tests and supplemental fertility are not required for this practice.

**Seedbed preparation and  
seeding**

**Conventional seedings**

Prepare a smooth, firm seedbed at a minimum depth of three inches using tillage methods most suited to the soils of the site. Place seed at a depth not to exceed two times the seed diameter, with a grassland drill equipped with a double disc opener, depth control mechanism, and seed covering device(s). Grain drills and cultipacker-type seeders are acceptable if the seed delivery mechanism is designed to handle the type of seed being planted.

**No-till seedings for spring, and dormant  
seeding periods**

Approved burndown herbicides shall be used to kill or suppress existing vegetation where necessary. A seed drill designed for no-till seedings will be used. No-till grain drills are

acceptable if the seed delivery mechanism is designed to handle the type of seed being used.

### **Species selection and sources**

Forb seed and/or propagules should originate from plants growing within a 100 mile radius of the site where possible. This activity should be conducted according to applicable laws and regulations. Commercial sources specializing in locally collected and propagated seed are listed in the publication entitled *Prairie Establishment and Landscaping* by William E. McClain, 1997. Technical Publication #2. Division of Natural Heritage. Illinois Department of Natural

Resources. Springfield, Illinois. This document is located in the field office technical reference file.

Form the specific list for each habitat type, select a minimum of five grasses. The **maximum** total amount of grass seed shall not exceed four pounds (PLS) per acre. A minimum of ten forb species (with a minimum of two of the forbs being legume species) will be selected. The forb mixture will be seeded at a **minimum** of one pound (PLS) per acre. Each species selected shall be at least 5% by weight of the grass or forb mix.

## **SPECIFICATIONS FOR SPECIFIC HABITATS**

### **Savanna**

#### **Species selection for trees**

A minimum of two tree species will be used from the species list for the savanna type being restored. At least one of the primary (dominant) tree species listed for the type of savanna being restored must be used. More than 50% of the total trees planted will be primary species.

#### **Tree density**

In savanna areas plant trees at the rate of 25 trees per acre at greater than 30 foot spacing. Uniform spacing at this density would be 42 feet. However, the spacing should be varied to allow for some parts of the savanna to have a more open canopy (greater spacing or small "openings"); while other parts of the savanna

would have clumps of trees or a more closed canopy.

#### **Stock size and planting dates**

Tree planting stock will be at least 3 feet tall with at least ½ inch caliper. The large initial size is required to facilitate their protection from fire, and reduce competition from grass. It is recommended that container grown air root pruned stock be used because these seedlings have thick fibrous roots as opposed to a large taproot, which may be difficult to plant. Seedlings will be planted by hand or using an auger at least 12 inches in diameter. Soil will be firmly packed around seedling roots. Weed barrier fabric squares (4 feet by 4 feet or larger) can be used to control competing vegetation. Planting will occur between October 1 and when the ground freezes. Planting may continue in early spring as soon as the ground can be worked and no later than April 25th.

# Mesic Savanna

**Mesic savanna** communities once occupied a major part of the landscape of Illinois. This community is characterized by widely spaced, open grown trees and a herbaceous, prairie-like understory. The canopy cover created by the trees ranges from 10% to as high as 80%. Although this community may have been more common in the northern two-thirds of the state, savanna or open woodland was present throughout much of Illinois. Very little of this community is present today due to the absence of fire.

<b>Primary trees</b>	Bur oak White oak	<i>Quercus macrocarpa</i> <i>Quercus alba</i>
<b>Secondary trees</b>	Black oak Shagbark hickory Chinkapin oak Mockernut hickory	<i>Quercus velutina</i> <i>Carya ovata</i> <i>Quercus muehlenbergii</i> <i>Carya tomentosa</i>
<b>Shrubs</b>	Hazelnut American plum	<i>Corylus americana</i> <i>Prunus americana</i>
<b>Grasses</b>	Big bluestem Indian grass Bottlebrush grass Silky wild rye Little bluestem	<i>Andropogon gerardii</i> <i>Sorghastrum nutans</i> <i>Elymus hystrix</i> <i>Elymus villosus</i> <i>Schizachyrium scoparium</i>
<b>Wildflowers</b>	Purple coneflower Drooping yellow coneflower Wild geranium Wild columbine Wild larkspur Starry Solomon's seal Silene Wild hyacinth Alum root Shooting star Ohio spiderwort Tall tickseed American columbo Stiff tickseed Wild quinine Pale purple coneflower Lead plant Purple prairie clover Indian plantain Tick trefoil White false indigo Golden alexander Woodland sunflower Blazing star	<i>Echinacea purpurea</i> <i>Ratibida pinnata</i> <i>Geranium maculatum</i> <i>Aquilegia canadensis</i> <i>Delphinium tricornu</i> <i>Smilacina stellata</i> <i>Silene stellata</i> <i>Camassia scilloides</i> <i>Heuchera americana</i> <i>Dodecatheon meadia</i> <i>Tradescantia ohiensis</i> <i>Coreopsis tripteris</i> <i>Frasera caroliniensis</i> <i>Coreopsis rigida</i> <i>Parthenium integrifolium</i> <i>Echinacea pallida</i> <i>Amorpha canescens</i> <i>Dalea purpurea</i> <i>Cacalia atriplicifolia</i> <i>Desmodium canadense</i> <i>Baptisia leucophaea</i> <i>Zizia aurea</i> <i>Helianthus divaricatus</i> <i>Liatris scariosa</i>

Management: Fire is essential for the management of savanna communities. If trees are planted, they must be protected from fire until they reach a size resistant to fire, usually four to six inches in diameter at breast height. Prescribed burning should be conducted every year for five years. After this time, prescribed burning should be on a three or four year schedule.

## Savanna on Claypan Soils

**Savanna communities on claypan soils** once occupied a major part of the landscape of Southern Illinois. This community is characterized by widely spaced, open grown trees and a herbaceous, prairie-like understory. The canopy cover created by the trees ranges from 10% to as high as 80%. Very little of this community is present today due to the absence of fire.

<b>Primary trees</b>	Post oak Swamp white oak Blackjack oak Pin oak	<i>Quercus stellata</i> <i>Quercus bicolor</i> <i>Quercus marilandica</i> <i>Quercus palustris</i>
<b>Secondary trees</b>	Shagbark hickory Black oak Mockernut hickory	<i>Carya ovata</i> <i>Quercus velutina</i> <i>Carya tomentosa</i>
<b>Shrubs (wet sites)</b>	Deciduous holly Swamp rose	<i>Ilex decidua</i> <i>Rosa setigera</i>
<b>Grasses &amp; Sedges</b>	Spike rush Bent grass Little bluestem Curly grass Wood reed Pennsylvania sedge Sedge Frank's sedge Sedge Manna grass	<i>Eleocharis obtusa</i> <i>Agrostis perennans</i> <i>Schizachrium scoparium</i> <i>Danthonia spicata</i> <i>Cinna arundinacea</i> <i>Carex pensylvanica</i> <i>Carex artitecta</i> <i>Carex frankii</i> <i>Carex glaucoidea</i> <i>Glyceria striata</i>
<b>Wildflowers</b>	Wild quinine Hog peanut Prairie blazing star Woodland sunflower Wild blue iris Aster Aster Penstemon Bedstraw Mountain mint Primrose Loosestrife	<i>Parthenium integrifolium</i> <i>Amphicarpa bracteata</i> <i>Liatris pycnostachya</i> <i>Helianthus divaricatus</i> <i>Iris shreveii</i> <i>Aster patens</i> <i>Aster turbinellus</i> <i>Penstemon digitalis</i> <i>Galium obtusum</i> <i>Pycnanthemum tenuifolium</i> <i>Oenothera pilosella</i> <i>Lysimachia lanceolata</i>

**Management:** Fire is essential for the management of savanna communities. If trees are planted, they must be protected from fire until they reach a size resistant to fire, usually four to six inches in diameter at breast height. Prescribed burning should be conducted every year for five years. After this time, prescribed burning should be on a three or four year schedule.



# Sand Savanna

**Sand savanna** communities once occupied sandy soils along glacial moraines and major rivers in Illinois. This community is characterized by widely spaced, open grown trees and a herbaceous, prairie-like understory. The canopy cover created by the trees ranges from 10% to as high as 80%. Very little of this community is present today due to the absence of fire.

<b>Primary trees</b>	Black oak	<i>Quercus velutina</i>
	Blackjack oak	<i>Quercus marilandica</i>
<b>Secondary trees</b>	Mockernut hickory	<i>Carya tomentosa</i>
	Black hickory	<i>Carya texana</i>
<b>Shrubs</b>	New Jersey tea	<i>Ceanothus americanus</i>
	American plum	<i>Prunus americana</i>
	Prickly ash	<i>Zanthoxylum americanum</i>
	Aromatic sumac	<i>Rhus aromatica</i>
<b>Woody vines</b>	Virginia creeper	<i>Parthenocissus quinquefolia</i>
	Bittersweet	<i>Celastrus scandens</i>
<b>Grasses</b>	Bead grass	<i>Paspalum bushii</i>
	Little bluestem	<i>Schizachyrium scoparium</i>
	Sand reed grass	<i>Calamovilfa longifolia</i>
	Big bluestem	<i>Andropogon gerardii</i>
	Porcupine grass	<i>Stipa spartea</i>
<b>Wildflowers</b>	Ohio spiderwort	<i>Tradescantia ohiensis</i>
	Cream false indigo	<i>Baptisia leucophaea</i>
	Butterfly weed	<i>Asclepia tuberosa</i>
	Sand milkweed	<i>Asclepias amplexicaulis</i>
	Prairie spurge	<i>Euphorbia corollata</i>
	Birds foot violet	<i>Viola pedata</i>
	Starry Solomon's seal	<i>Smilacina stellata</i>
	False dandelion	<i>Krigia biflora</i>
	Prickly pear cactus	<i>Opuntia humifusa</i>
	Round-headed bush clover	<i>Lespedeza capitata</i>
	Western sunflower	<i>Helianthus occidentalis</i>
	Carolina rose	<i>Rosa carolina</i>
	Rigid tickseed	<i>Coreopsis rigida</i>
	Spotted mint	<i>Monarda punctata</i>
	False Solomon's seal	<i>Smilacina racemosa</i>
	Blazing star	<i>Liatris pycnostachya</i>

**Management:** Fire is essential for the management of savanna communities. If trees are planted, they must be protected from fire until they reach a size resistant to fire, usually four to six inches in diameter at breast height. Prescribed burning should be conducted every year for five years. After this time, prescribed burning should be on a three or four year schedule.

## Tall Grass Prairie

**Tall grass prairie** was a prominent landscape type in all but eight of the 102 counties in Illinois. This community consisted of grasses and wildflowers and is the plant community responsible for the highly productive soils within Illinois.

<b>Primary grasses</b>	Big bluestem Indian grass Little bluestem	<i>Andropogon gerardii</i> Vitman <i>Sorghastrum nutans</i> (L.) Nash <i>Schizachyrium scoparium</i> (Michx.) Nash
<b>Secondary grasses</b>	Bluejoint grass Eastern gamma grass Prairie cord grass Prairie dropseed Switchgrass	<i>Calamagrostis canadensis</i> (Michx.) Beauv. <i>Tripsacum dactyloides</i> <i>Spartina pectinata</i> Link <i>Sporobolus heterolepis</i> A. Gray <i>Panicum virgatum</i>
<b>Forbs (Wildflowers)</b>	Black-eyed Susan Butterfly milkweed Compass plant Cream false indigo False sunflower Illinois bundle flower Lead plant New England Aster Ohio spiderwort Pale beardtongue Pale purple coneflower Prairie blazing star Prairie dock Purple prairie clover Rattlesnake master Round-headed bush clover Stiff goldenrod Tall tickseed Tick trefoil Tick trefoil White false indigo White prairie clover Wild quinine Yellow coneflower	<i>Rudbeckia hirta</i> L. <i>Asclepias tuberosa</i> <i>Silphium laciniatum</i> L. <i>Baptisia leucophaea</i> <i>Heliopsis helianthoides</i> <i>Desmanthus illinoensis</i> <i>Amorpha canescens</i> Pursh <i>Aster novae-angliae</i> L. <i>Tradescantia ohimensis</i> Raf. <i>Penstemon pallidus</i> Small <i>Echinacea pallida</i> <i>Liatris pycnostachya</i> Michx. <i>Silphium terebinthinaceum</i> Jacq. <i>Dalea purpurea</i> <i>Eryngium yuccifolium</i> Michx. <i>Lespedeza capitata</i> Michx. <i>Solidago rigida</i> L. <i>Coreopsis tripteris</i> <i>Desmodium canadense</i> <i>Desmodium illinoense</i> <i>Baptisia leucantha</i> <i>Dalea candida</i> <i>Parthenium integrifolium</i> L. <i>Ratibida pinnata</i> (Vent.) Barnh
<b>Shrubs</b>	Prairie willow Hazelnut	<i>Salix humilis</i> <i>Corylus americana</i>

**Management:** Prairie communities are best managed by the use of prescribed fire. During the establishment of the prairie, prescribed burning should be conducted every year to help with the establishment of the prairie plants. After five or six years, the prescribed fire can be conducted every other year. Prescribed burning is best conducted during the late fall or early spring.

## Sand Prairie

**Sand prairies** occur in Illinois along the Illinois, Mississippi, Green, and Kankakee Rivers. Their soils, which have a high sand content, may be dry to relatively moist, with the dry sand prairies being the most common.

### Primary Grasses

June grass  
Little bluestem  
Porcupine grass  
Sand love grass  
Sand reed grass

*Koeleria cristata* (L.) Pers.  
*Schizachyrium scoparium* (Michx.) Nash  
*Stipa spartea* Trin.  
*Eragrostis trichodes* (Nutt) Wood  
*Calamovilfa longifolia* (Hook.) Scribn.

### Secondary Grasses

Big bluestem  
Indian grass

*Andropogon gerardii* Vitman  
*Sorghastrum nutans* (L.) Nash

### Forbs (Wildflowers)

Butterfly milkweed  
Cleft phlox  
Cudweed  
Erect dayflower  
False Dandelion  
Goat's rue  
Golden aster  
Ohio spiderwort  
Pale beardstongue  
Partridge pea  
Poppy mallow  
Prairie spurge  
Prickly pear cactus  
Rough blazing star  
Round-headed bush clover  
Sand milkweed  
Sand primrose  
Western sunflower  
White false indigo

*Asclepias tuberosa*  
*Phlox bifida* Beck.  
*Gnaphalium obtusifolium*  
*Commelina erecta* L.  
*Krigia biflora*  
*Tephrosia virginiana* (L.) Pers.  
*Chrysopsis villosa* (Pursh) Nutt.  
*Tradescantia ohiensis* Raf.  
*Penstemon pallidus*  
*Cassia fasciculata* Michx.  
*Callirhoe triangulata*  
*Euphorbia corollata* L.  
*Opuntia humifusa*  
*Liatris aspera* Michx.  
*Lespedeza capitata* Michx.  
*Asclepias amplexicaulis*  
*Oenothera rhombipetala*  
*Helianthus occidentalis* Ridell  
*Baptisia leucophaea*

### Shrubs

New Jersey tea  
Fragrant sumac

*Ceanothus americana*  
*Rhus aromatica*

**Management:** Prescribed fire is essential in the establishment of this community. Annual burning during the establishment phase, the first five or six years, during the dormant season (fall or early spring) is necessary to stimulate the prairie plants and control weeds. After this stage, prescribed burning can be conducted every two or three years. Woody vegetation should be controlled and not allowed to shade out the prairie plants.

# Hill Prairie

**Hill prairie** communities occur on windblown deposits, known as loess, located on the bluffs of the Illinois and Mississippi Rivers and their tributaries. Other types of hill prairies occur on glacial drift on the bluffs of smaller rivers.

<b>Primary Grasses</b>	Little bluestem	<i>Schizachyrium scoparium</i> (Michx.) Nash
	Side oats grama	<i>Bouteloua curtipendula</i> (Michx.) Torr.
<b>Secondary grasses</b>	Big bluestem	<i>Andropogon gerardii</i> Vitman
	Indian grass	<i>Sorghastrum nutans</i> (L.) Nash
	Porcupine grass	<i>Stipa spartea</i>
	Rough dropseed	<i>Sporobolus asper</i>
<b>Forbs (Wildflowers)</b>	False boneset	<i>Kuhnia eupatorioides</i>
	False Dragonhead	<i>Physostegia virginiana</i>
	Hoary Vervain	<i>Verbena stricta</i>
	Illinois bundle flower	<i>Desmanthus illinoensis</i>
	Ironweed	<i>Vernonia fasciculata</i> Michx.
	Lead plant	<i>Amorpha canescens</i> Pursh
	Lousewort	<i>Pedicularis canadensis</i>
	Milk vetch	<i>Astragalus canadensis</i>
	Pale purple coneflower	<i>Echinacea pallida</i> Nutt.
	Purple prairie clover	<i>Dalea purpurea</i>
	Rigid goldenrod	<i>Solidago rigida</i> L.
	Rough blazing star	<i>Liatris aspera</i> Michx.
	Scurf-pea	<i>Psoralea tenuiflora</i>
	Self heal	<i>Prunella vulgaris</i>
	Showy goldenrod	<i>Solidago nemoralis</i> Ait.
	Silky aster	<i>Aster sericeus</i>
	Sky blue aster	<i>Aster azureus</i>
	Stiff tickseed	<i>Coreopsis palmata</i> Nutt.
	White prairie clover	<i>Dalea candida</i>

**Management:** Prescribed fire is essential for the management of hill prairie communities. Annual burning during the dormant season is necessary for the first five or six years following establishment. After this time, prescribed burning every two or three years is sufficient to maintain the community. Be alert for, and control, invasion by woody shrubs.